

THE "BIT TAX"

by: Robert Bruce,
Long Island Section/USAB Liaison

The Dec. 2 '96 issue of "Barrons" contains an article entitled, "Phone Bill", which describes a conflict between Internet Service Providers (ISPs) and regional Bell telephone companies. The results of that conflict may drastically affect those of you who 'surf the Net,' use E-mail, or send FAXes. Regional Bell companies have started a campaign to persuade Federal regulators to let them attach a surcharge to phone bills for use of the phone to transmit data. I've spoken to several persons at the FCC, and I'm not aware of any scheduled FCC hearings. However I do know that the FCC is beginning deliberations in 12/96. I urge all readers to:

1. Get and read the article;
2. Write FCC Secretary William Caton (address below) and FCC Commissioner Reed Hundt (same address or E-mail rhundt@fcc.gov) to express your opposition to this "BIT TAX." In case you feel disinclined to write a letter, here's a sample of what you can say. Feel free to use as is or edit to suit your taste.

Your return address
Your city, state, ZIP
Date

Mr. William Caton,
Secretary FCC
1919 M Street NW
Washington, DC 20554
Dear Sir:

I understand the regional Bell telephone providers are requesting permission to attach an access charge (or other rate increase) to their bills for use of the phone to transmit data. I urge you to deny any such request, as this would have a smothering effect on all Internet use, all E-mail and use of the phone to transmit FAXes. As much as the phone companies contribute to the wealth of the U.S., the enormous number of Internet, E-mail and FAX users contribute far more. To permit a surcharge is to penalize the nation for its progress in communication. Don't let it happen.

Thank you for your consideration of this request.

Yours truly,
Your signature
Your Name printed

APPLICATION SPECIFIC ACTIVE PIXEL IMAGE SENSORS

LI LEOS Chapter is hosting Prof. Brad Carlson

Electronic imaging systems used for electromagnetic radiation detection are present in many consumer, commercial and defense products (e.g., video cameras, infrared imagers and gamma ray detectors). The dominant technology in present electronic imaging systems is the charge-coupled device (CCD); however, significant advantages are obtained by using more flexible technologies such as CMOS. In recent years researchers have investigated the use of standard CMOS technology for electronic imaging with (perhaps surprisingly) good results. In this talk CMOS active pixel image sensors are described, and the results of ongoing work at the University at Stony Brook are presented.

Biography:

Bradley S. Carlson received his Bachelor of Electrical Engineering degree from Gannon University, Erie, PA in 1987, and MS and PhD degrees in Computer Engineering from Syracuse University, Syracuse, NY in 1989 and 1991, respectively.

From 1986 to 1987 he was employed at the General Electric Company. He is currently an Assistant Professor of electrical engineering at the State University of New York at Stony Brook, and Associate Director of the NSF Industry/University Collaborative Research Center for the Design of Analog/Digital Integrated Circuits (CDADIC). He has published numerous articles on the subjects of VLSI circuit design, CAD for VLSI and parallel and distributed computing.

His seminal paper on the use of transistor reordering for the performance optimization of digital CMOS VLSI circuits was awarded a best paper award at the 1993 ACM/IEEE Design Automation Conference. His research is funded by NSF, the Engineering Foundation and commercial industry.

His research interests include CMOS image sensors, performance optimization and automatic layout of VLSI circuits, circuit simulation, circuit synthesis, granularity optimization, scheduling and allocation for parallel computing and fault tolerant broadcasting algorithms for distributed computing.

Date: March 6th, Time: 7:30 PM, Place: AIL Systems Commack Rd, Deer Park, NY. For more information please call Marie Cotrone at (516) 738-4914.

EDITORIAL

by Lazaros Pavlidis

I was very happy to reduce the size of my editorial article this month due to a wealth of articles. I do though want to take few lines to thank all members that responded to the call for donations. Thank you to all that donated or are in the process of donating personal or company owned equipment and parts. We especially need parts and modules. If you need a letter from us explaining who the receiving organizations are and how the donations will be used call me and I will be glad to fax the information to you or anybody else in your organization. I can be reached at (516)742-1174 or via e-mail at l.pavlidis@ieee.org

WEBWATCH

by Babak Beheshti

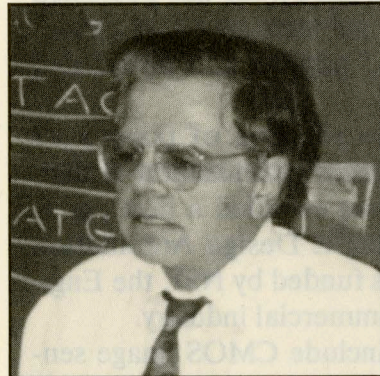
Finding Information and Resources on the Internet

The Internet contains many tools that perform the search for information for you. Two main search tools are called "Search Directories" and "Search Engines". Search directories are descriptive listings of Web sites. Search engines search World Wide Web sites, Usenet groups etc. to find a match to your search keyword. You can invoke advanced search to narrow down to more specific resources. The most important step in your search process is to define descriptive keywords best describing the context of your search. Different search tools will give you different results. So be sure to try a few search tools for each of your searches for the most comprehensive results. Some of the most popular search tools are listed below:

1. Yahoo: One of the most popular search tools. This site has an excellent data base with search options. (<http://www.yahoo.com>)
2. Magellan: This site provides options for narrowing or expanding your search by choosing sites rated based on restricted content. (<http://magellan.mckinley.com>)
3. Excite: This site provides the fullest range of services of all the search tools. Concept based searching replaces keyword search for more effective searches. (<http://www.excite.com>)
4. Alta Vista: Digital's Alta Vista has one of the largest web search databases. (<http://www.altavista.digital.com>)
5. Info Seek: One of the newer search tools allowing for keyword and phrase search. (<http://www.infoseek.com>)

Bioinformatics

A New Field of Interest to Computer Engineers
by Stanley Stolov



The recent large scale funding of the Human Genome Project (HGP) by the National Institutes of Health (NIH) and the Department of Energy has provided new opportunities for Computer and Software Engineering skills conversion. The goals of the HGP is to identify and map the estimated three billion DNA nucleotides and 75,000 genes estimated to exist on the Human Genome. The acceleration of discovery has been made possible by new large scale DNA sequencing instrumentation and by NIH requirements for sharing discovery through Internet accessible computer databases.

While the biotechnical community wrestles with the question, do we train Biologists to be Computer Specialists or Computer Specialists to be Biologists, I have chosen the latter. I presented a paper, "Internet: A Computer Support Tool for Building the Human Genome," at Electro/95 in Boston and presently teach an eight week course for the Continuing Education Program of Syosset Central School District. The course "Genes, DNA, and Disease," will be taught again in the Spring on Wednesdays, 7:30-8:30 PM beginning March 5, 1997. Course fees are \$40, Seniors only pay \$25; out of district residents add \$5.00. Interested parties may contact Syosset Continuing Education for registration booklet at 516-364-5738. For course outline send E-Mail to s.stolov@ieee.org.

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PULSE Deadlines

for March 1997	2-1-97
for April 1997	3-1-97
for May 1997	4-1-97
for June 1997	5-1-97

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The Consultants Network of LI maintains a referral service of Engineering, Computer, Managerial and Technical Professionals. Call or write for more information. There is no charge to the client for this service.

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LONG ISLAND IEEE CALENDAR

No membership requirements, no registration, no fees at meeting unless otherwise noted.

February 5, 7:00 PM — Student Branches Dinner Meeting at AIL Systems on Commack Road in Deer Park. All the Student Officers and IEEE Faculty Advisors are invited to this dinner get together. For more information call Kevin Shahipour at (516) 472-6666 ext. 24 or E-mail at K.Shahipour@ieee.org.

February 5, 7:00 PM — LI Consultant's Network. Ron Richards, a very knowledgeable and humorous speaker will give a presentation on current and future desktop PC computer technology. L.I.E. exit 57 at the LILCO training center. For further information call Peter Buitenkant at (516) 491-3414.

February 6, 7:30 PM — Vehicular Technology Society, NY / LI Joint Chapter presents: "Penn Station Central Control", Talk and Tour By Phil Balkas LIRR Assistant Chief Engineer - Signal and Communications. 400 West 31st Street, on west Corner of 9th Ave., NY, NY. Follow the signs to the meeting. For further information contact Tom Sisler, Chairman, E-mail: t.sisler@ieee.org or phone: (718) 558-4629

February 10-26, 6:00 - 9:00 PM — PROGRAMMING LANGUAGE SEMINAR C/C++/VC++ by Walt Whipple, Ph.D., P.E. The seminar will be held in Farmingdale. For more information call Walt Whipple (516) 738-3114 or e-mail at w.whipple@ieee.org.

February 19, 6:00 PM — Engineers' Week Dinner sponsored by EJCLI at Manor East Caterers, 201 Jerusalem Ave, Massapequa. 6:00 PM. Cocktails and exhibit of winning Rube Goldberg machines; 7:00 PM Dinner & awards; Keynote Speaker Dr. Raymond Damadian, Founder, President & Chairman of Fonar Corporation: "Long Island and its Role in the Incubation & Development Of MRI." Table reservations on a first-come-first-served basis. Send reservations with checks for \$35/person no later than February 17 to Mort Rockman, 31 Ryder Ave, Dix Hills, NY 11746, (516) 586-1765.

February 20 - 10:00 AM - 5:00 PM - The Metropolitan Engineering Societies Council Presents a Symposium "Technical Feasibility of Manned Flight to Mars". Location: The New York Academy of Science, 2 East 62nd Street, New York City. The speakers are major scientists and engineers in the field of inter-planetary flight systems. They will present the technical elements for achieving the manned mission within the next 10-20 years. Attendance Fees: IEEE & MESC Members \$50. Non-members \$75.00, College & IEEE Student members \$10.00; Non-member college students \$15.00. Make check payable to: IEEE-NY. Mail check to: Leon Katz, Rail Transportation Systems Inc., 120 Lexington Avenue, Suite 540, NY, NY 10170

February 24, 6:00 PM — EXCOM MEETING. AT AIL.

February 26 - 6:15 PM - EMC AND EMBS - JOINT MEETING LONG ISLAND AND NEW YORK. DESIGN OF PHYSIOLOGICAL MONITORING EQUIPMENT FOR FMC and Safety in the MRI Environment. Speaker: John Plump, Magnetic Resonance Equipment Corp. TOURO College of Health Sciences Rm.79 Bldg. 14, West Road, Long Island Development Center, Dix Hills, NY 11746. For details see article below or contact Robert Berkovits EMC Chapter Chair at (516) 755-7668.

February 27, 5:30 PM, (Buffet) 7:00-9:00 PM (Program) — The Metropolitan Engineering Societies Council The Society of Fire Protection Engineers. Subject: "Engineering the Impossible - Profiting from the Improbable". Keynote Speaker: William Nirenberg - Director Emeritus, Scripps Oceanographic Institute. Place: The New York Academy of Sciences, 2 East 63rd Street, New York, NY 10021. \$30.00 per person reservations required.

March 3,5,10,12,17, 6:00 - 9:00 PM — Microprocessors and Software Seminar. See information on Page 5. For more details call Babak Beheshti at (516) 686-7437 or e-mail at b.beheshti@ieee.org.

March 5, 7:00 PM — LI Consultant's Network. General networking meeting. A roundtable discussion "Aspects of Consultant-Client Relations" will be conducted. (Held over from our January meeting). L.I.E. exit 57 at the LILCO training center. For further information call Peter Buitenkant at (516) 491-3414.

March 5, 7:30 PM — The Long Island LEOS Chapter is hosting a guest speaker, Professor Brad Carlson. "Application Specific Active Pixel Image Sensors". Place: AIL Systems Commack Rd, Deer Park, NY. For more information see page 1 or call Marie Cotrone at (516) 738-4914.

April 2,7,9,14, 6:00 - 9:00 PM — Intermediate Microprocessors and Software Seminar. For more details call Babak Beheshti at (516) 686-7437 or e-mail at b.beheshti@ieee.org.

Design of Physiological Monitoring Equipment for FMC and Safety in the MRI Environment

Long Island and New York Joint EMC and EMBS Meeting - February 26, 1997, 6:15 PM

Joint meeting of the Long Island and New York Chapters of the Electromagnetic Compatibility and Engineering in Medicine and Biology Society. Design of Physiological Monitoring Equipment for EMC and Safety in the MRI Environment. John Plump, Magnetic Resonance Equipment Corp.

John Plump will discuss the reasons for physiological monitoring and the types of sensors used in the MRI environment. EMC and patient Safety are significant design factors for equipment that must operate in the large static and varying magnetic and varying radio frequency fields in the MRI room. Mr. Plump will describe the design and exhibit a fiber optic pulse oximeter sensor. ECG monitoring will be discussed and simulated.

John Plump is the marketing manager of MR Equipment Corp. He graduated from Brooklyn Polytechnic Institute as an electrical engineer. He worked as a computer design engineer for 15 years. He has worked for North American Phillips in marketing and sales management for more than twenty years.

Light refreshments will be served.

Directions to TOURO College of Health Sciences Institute for Biomedical Engineering and Rehabilitation Services Building 14, Room 79. For recorded directions call (516) 673-3200.

From the intersection of Old Country Rd. and Rte. 110 which is just South of the Northern State Parkway Exit 40S and about 3/4 miles North of the Rte 110 exit of the LIE Exit 49N. Go Northeast on Old Country about 1/2 mile to a traffic light. About 100 yards past this light and just before a bridge over the Northern State make a sharp right and immediately a sharp left into the Long Island Development Center. Go past two stop signs and at West Road (there will be a sign) take a right. TOURO Bldg. 14 is the first building on the left. (Recorded directions from TOURO will lead to Bldg. 10 the adjacent building.)

PROFESSIONAL ACTIVITIES REPORT

by Irwin Weitman, P.E., PACE Chairman

The PACE report for January mentioned the improved economic conditions for engineering employment that has finally arrived on Long Island. This means that we will experience a repeat of history where the Employment Assistance Committee will just disappear due to such little need. I find this distressing since as we all know, that these economic cycles always repeat. What it means is that when the next downturn occurs there will be no structure in the Long Island Section to help those of us in need. What I propose here, is that we find several other services that our employed members need and include them in the responsibilities of a new committee (new name) that we will form.

As a guide we should look to the functions that the IEEE Consultants' Network provides for its members. Such a committee will be organized and able to respond more quickly. It took the present committee more than two years to get running smoothly. Many of the downturns don't last that long and therefore the EAC is not able to satisfactorily serve our members.

I would like to set up a committee to look at the various services our employed members need and that IEEE could provide. I am looking for volunteers to serve on such a committee and individuals with ideas to present to the commit-

tee. Anyone with ideas or a desire to serve on this committee please contact me by e-mail at i.weitman@ieee.org

Instead of just letting the EAC die from lack of use and purpose, lets just change its' name and give it new life with more goals. From time to time I will list e-mail addresses that I think will be useful to some of our members. If you have any such addresses please send them to me by e-mail and I will try to include them in this column. For starters here are a few from a Legislative Report Letter I receive from IEEE-USA.

Presidents Office of Science and Technology regarding an international "intellectual Property Treaty":

<http://www.ieee.org/usab/DOCUMENTS/FORUM/LIBRARY/PAPERS/wipo.html>

NSF grant proposals:

<http://www.nsf.gov/od/lpa/meritltr.htm>

FCC standards for digital

TV: <http://www.fcc.gov>

IEEE job listing service for both employees and companies.
www.ieee.org/jobs.html

For downloading listing autoresponse files

info.ieeusa.jobs.r0x@ieee.org where r is the region number (we are in region 1). No message is required.

More next month. Your comments about the PACE REPORT to me by e-mail is encouraged.

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Microprocessors and Software Seminar

3/3, 3/5, 3/10, 3/12 and 3/17

Overview

The Long Island Section of IEEE is presenting a five session (3 hours per session) training course "Microprocessors and Software for the Novice". This seminar begins with a global discussion of microprocessors and their application in today's products, continues with introduction of development tools, selection criteria of a particular processor and proper concurrent design approach that must be applied to a microprocessor based system.

Who Should Attend

This course is for engineers and managers who need a better understanding of the terminology, advantages and pit-falls of today's microprocessor/software technology. It will also serve the needs of the entry level hardware or software engineer who can gain much practical knowledge based on the many years of experience of the engineer/instructor.

Key Benefits

- Learn the terminology and fundamental key concepts of any microprocessor based system
- Understand sufficient amount of the technology to be able to do further study on your own
- Understand what software and hardware tools are the minimum requirements for a successful development
- Be able to make trade-off decisions about a design before start of the project

Content

What you will learn: hardware/software, Make or buy?, What is a microprocessor, a bit of history, what can it do, Microprocessors vs. Microcontrollers, Families of processors, Abilities and constraints, The design cycle, Hardware design issues, Software design issues, Selection of processor, Selection of tools: Compilers, simulators, in circuit emulators, logic analyzers ..., Assembly or High level programming? Specific design examples, A live walk through of a simple application development from program development to compilation and execution.

Seminar Coordinator and Instructor

Professor Babak D. Beheshti is a faculty member in the School of Engineering and Technology, New York Institute of Technology and a consultant. He has thought many courses on the topic of microprocessors, and in his consulting activities he has many years of microcontroller based products and systems design experience.

Location and Times

The seminar will be given somewhere in the central Long Island area on Monday and Wednesday evenings, 6:00 to 9:00 PM. Registrants will be advised of the exact location and receive an acknowledgment by mail shortly after registration. The seminar is wholly the responsibility of IEEE LIS and the instructor.

For further information contact Prof. Beheshti via email at b.beheshti@ieee.org or by phone at 516-686-7437.

Fees will be refunded in full if the seminar is canceled or the registrant cannot be accommodated due to capacity limitations. Other refunds will be considered.

Registration Fees

Payment Due	IEEE members ²		
	Public ¹	member	student/life
Feb. 15	\$350	\$250	\$190
Feb. 25	\$400	\$300	\$240

Notes:

1. Includes IEEE Associate New Member dues for those who submit an application at the seminar.
2. 1997 membership card required at first session. Not applicable to affiliate members.

Registration Form**Microprocessors/Software Mar. 97**

Make checks payable to "IEEE Long Island Section".
Send form to Babak Beheshti, 101 Caffrey Avenue,
Bethpage, NY 11714-1435

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30 Years Ago

by Rod Lowman, Historian

The Feb. issue of the PULSE, 30 years ago, was devoted completely to increasing the membership of the Long Island Section. There were editorials by the editor, the Chairmen and notes from other officials but the most compelling article, I thought, was a report by Ray Hellmann on an analysis and survey done at Hazeltine.

The analysis of different departments there showed that those with the greatest ingenuity and greatest output came from departments with the highest proportion of IEEE members. It stands to reason that for a company like Hazeltine or other companies pushing the frontiers of communications, air traffic control, navigation, or other new innovations, engineers regularly discussing the latest developments with experts in the field at IEEE meetings, would be the best equipped to utilize this information in their work.

So much for the analysis, now for the survey.

The PULSE of Long Island

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February 1997

Ray reported that in the overachieving departments the supervisors were IEEE members. In the underachieving departments the supervisors were not. In talking with the engineers in the underachieving departments, the engineers concluded that if the supervisors were not members, membership must not be that important to their career. To bring the whole company up, Hazeltine started a drive to enlist all the supervisors in the IEEE! Has human nature changed in 30 years? I suspect not. If your company has departments that are underachieving it may be the lack of leadership syndrome. For when the leaders have lost their way the followers are likely to wander also. So, do your company a favor and encourage the supervisors of any laggard department to set a more professional example for their followers by joining the IEEE; and participating in the activities where they will learn the latest information from the best sources. They will help not only themselves but their department members also. A rising tide lifts all boats.

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